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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/543,168

02/28/2006

Jun Fujimoto

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LEYDIG VOIT & MAYER, LTD
700 THIRTEENTH ST. NW
SUITE 300
WASHINGTON, DC 20005-3960

EXAMINER

WYATT, KEVIN S

ART UNIT

PAPER NUMBER

2878

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/543,168	Applicant(s) FUJIMOTO ET AL.	
	Examiner Kevin Wyatt	Art Unit 2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 March 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-14, 17-20 and 22-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-14, 17-20 and 22-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 03/25/2008 has been entered.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 11 and 24 are rejected under 35 U.S.C. 102(e) as being anticipated by Silverbrook (U.S. Patent No. 6,850,274 B1).

Regarding claim 11, Silverbrook shows in Fig. 161 a discrimination sensor (card reader) that optically detects a surface structure of an object by scanning a surface of the object, the discrimination sensor comprising: a sensor unit (combination of ccd (34) and (LED (512))) having an optical path opening wider in a direction perpendicular to a

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scanning direction along which the object (9, i.e., card) is scanned than in a direction parallel to the scanning direction; an integrated light emitting (512) and detecting unit (34)) located in the sensor unit and including at least one light emitter (512) emitting light, a detector (34) detecting light emitted by the at least one light emitter and that is reflected from the object (9), and a focusing optical system (combination of curved circumference above LED (512) and microlenses (534))) comprising a transparent body (514, i.e., plastic mold), wherein the at least one light emitter (512) and the light detector (34) are, embedded in the transparent body (514), and the transparent body (514) has an external surface including a first lens surface (529) that focuses the light emitted from the at least one light emitter (512) towards the optical path opening, and a second lens surface (534) that focuses light that is emitted from the at least one light emitter, that is reflected from the object (9), and that is incident on the detector (34).

Regarding claim 24, Silverbrook shows in Fig. 161 wherein the first and second lens surfaces (529 and 534) are adjacent each other on the external surface of the transparent body.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 11, 13-14, 17-20 and 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Numata (Publication No. U.S. 2002/015145 A1) in view of Silverbrook (U.S. Patent No. 6,850,274 B1).

Regarding claim 11, Numata shows in Fig. 15 a discrimination sensor that optically detects a surface structure of an object (BN, i.e., bank note) by scanning a surface of the object, the discrimination sensor comprising: a sensor unit having an optical path opening wider in a direction perpendicular to a scanning direction along which the object is scanned than in a direction parallel to the scanning direction; an integrated light emitting (LEDs 1-4) and detecting unit (14, i.e., photodiode array) located in the sensor unit and including at least one light emitter (1-4) emitting light, a detector (14) detecting light emitted by the at least one light emitter and that is reflected from the object (BN). Numata does not disclose a focusing optical system comprising a transparent body, wherein the at least one light emitter and the light detector are, embedded in the transparent body, and the transparent body has an external surface including a first lens surface that focuses the light emitted from the at least one light emitter towards the optical path opening, and a second lens surface that focuses light that is emitted from the at least one light emitter, that is reflected from the object, and that is incident on the detector. Silverbrook shows in Fig. 161 a focusing optical system (combination of curved circumference above LED (512) and microlenses (534))) comprising a transparent body (514, i.e., plastic mold), wherein the at least one light emitter (512) and the light detector (34) are, embedded in the transparent body (514), and the transparent body (514) has an external surface including a first lens surface

(529) that focuses the light emitted from the at least one light emitter (512) towards the optical path opening, and a second lens surface (534) that focuses light that is emitted from the at least one light emitter, that is reflected from the object (9), and that is incident on the detector (34). It would have been obvious to one skilled in the art to provide a focusing optical system such as provided in Silverbrook to the device of Numata for the purpose of aligning and consolidating sensor elements into a single mold, thus providing a more rigid structure.

Regarding claim 13, Numata further discloses the at least one light emitter individually emits a plurality of sensing light beams having wavelengths that differ from each other; and the light detector detects the sensing light beams reflected from the object independently when reflective sensing light beams are individually emitted (paragraph 0039, lines 1-8).

Regarding claim 14, Numata further discloses the light-receiver detector sequentially detects the sensing light beams reflected from the object when respective sensing light beams are individually emitted (paragraph 0039, lines 1-8).

Regarding claim 20, Numata further discloses a computation/determination unit (20, i.e., control process section) that performs a computation on a discrimination signal output from the light detector when light reflected from the object is detected, and determines whether the discrimination signal is within a predetermined tolerance range (performed while determining genuineness/falsehood of bank not (BN))(paragraph 0039, lines 4-8).

Regarding claims 17, Numata further discloses that the plurality of sensing light beams includes a sensing light beam having a wavelength band in a range from substantially 700 nm to substantially 1600 nm (800-1,000nm), and a sensing light beam having a wavelength band in a range from substantially 380 nm to substantially 700 nm (370-630nm).

Regarding claims 18 and 22, Numata further discloses that the plurality of sensing light beams include a sensing light beam having a wavelength band in a range from substantially 800 nm to substantially 1000 nm, and a sensing light beam having a wavelength band in a range from substantially 550 nm to substantially 650 nm (520-630nm).

Regarding claims 19 and 23, Numata discloses the claimed invention as stated above. Numata does not disclose that the plurality of sensing light beams include includes a sensing light beams in a band having a wavelength of substantially 940 nm, and a sensing light beam set in a band of: having a wavelength of substantially 640 nm. It has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum "ranges, or measurements" involves only routine skill in the art. It would have been obvious to one skilled in the art to provide sensing light beams having a wavelength of substantially 640nm or 940nm for the purpose of obtaining additional information on surface features or characteristics from reflected light mainly detected at certain wavelengths.

6. Claims 25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Numata (Publication No. U.S. 2002/015145 A1) and Silverbrook (U.S. Patent No. 6,850,274 B1) and further in view of Voser (U.S. Patent No. 6,172,745 B1).

Regarding claims 25-26, the modified device of Numata discloses the claimed invention as stated above. The modified device of Numata does not disclose, a transparent body includes on an external surface a third lens surface that focuses the light emitted from the second light emitter towards the optical path opening as recited in claim 25. In addition, the modified device of Numata does not disclose and the light detector is disposed between the first and second light emitters within a transparent body as recited in claim 26. Voser shows in Fig. 5 a transparent body includes on the external surface a third lens surface (either light emitting end (24) or (26)) that focuses the light emitted from the second light emitter towards the optical path opening in accordance with claim 25. In addition Voser a light detector (12) disposed between the first and second light emitters (24, 26) in accordance with claim 26. It would have been obvious to one skilled in the art to provide a configuration such as disclosed in Voser to the modified device of Numata for the purpose of improving light detection by providing light additional lighting.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Wyatt whose telephone number is (571)-272-5974. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on (571)-272-2328. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/K. W./
Examiner, Art Unit 2878

/Georgia Y Epps/
Supervisory Patent Examiner, Art Unit 2878